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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,981	06/27/2005	Abdallah Mechi	DK-US055154	9270

22919 7590 03/17/2006

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EXAMINER

RO, BENTSU

ART UNIT PAPER NUMBER

2837

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,981	<b>Applicant(s)</b> MECHI, ABDALLAH	
	<b>Examiner</b> Bentsu Ro	<b>Art Unit</b> 2837	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/27/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

**FIRST OFFICE ACTION**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Notohara et al US Patent No. 6,626,002 B1.

Claims 1 and 3 read onto Notohara et al teaching as follows:

Claims 1 and 3:	Notohara et al teaching:
1. (Currently Amended) A motor drive device  for an air conditioner  comprising:  a converter which receives AC power;  a three phase inverter which receives output voltage from the converter  and outputs an AC voltage to a motor for the air conditioner; and	Fig. 1 shows a motor drive device;  column 1, line 12 states that the invention relates to "an air conditioner or refrigerator";  Fig. 1 shows a converter circuit 2 which is a converter; the converter circuit 2 receives ac power from an ac power source 1;  Fig. 1 shows an inverter circuit 3; the inverter circuit 3 receives output voltage from the converter circuit 2;  the inverter circuit 3 outputs an ac voltage to a brushless dc motor 4; the brushless dc motor 4 is used in an air conditioner as explained previously with respect to column 1, line 12;

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Notohara et al.

Regarding claim 2, Notohara's converter circuit 2 can be a three phase converter if a three phase rectifying circuit is used. It is noted that the three phase rectifying circuit is a very common rectifying circuit in the three phase application.

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Macko et al US Patent No. 3,840,799.

Claims 1 and 2 read onto Macko et al teaching as follows:

Claims 1 and 2:	Macko et al teaching:
<p>1. (Currently Amended) A motor drive device for an air conditioner comprising:</p> <p>a converter which receives AC power;</p> <p>a three phase inverter which receives output voltage from the converter and outputs an AC voltage to a motor for the air conditioner; and</p> <p>a control means which controls the converter so as to maximize efficiency.</p>	<p>Fig. 3 circuit is a motor drive device; the Fig. 3 circuit is used for driving an air conditioner compressor, see column 1, lines 9-10;</p> <p>Fig. 3 shows a semi-converter 43' receiving ac power from a three-phase 60 Hz ac source 55;</p> <p>Fig. 3 shows an inverter 23' and a three phase motor 15';</p> <p>Fig. 3 shows a firing pulse circuit 57 for controlling the converter 23'; it is noted that all controls are designed for a maximum efficiency operation.</p>
<p>2. (Currently Amended) The motor drive device as set forth in claim 1, wherein</p> <p>the converter includes a three phase converter.</p>	<p>Fig. 3 shows a three phase converter 43'.</p>

6. Claims 1, 2, 4, 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kanazawa et al US Patent No. 5,654,882.

Regarding claim 1, Kanazawa et al Fig. 3 (the prior art circuit) teaches a motor drive device for an air conditioner (see column 1, lines 6-7), comprising: a converter (the rectifier 9 and the chopper circuit 10 together constitute a power converter, see abstract), a three phase inverter 11 for providing a three phase ac power to a motor 12; and a control means (the chopper control circuit 22).

Regarding claim 2, the power converter is a three phase converter.

Regarding claims 4 and 7, Kanazawa Fig. 3 shows three reactors L1, L2, L3 and three capacitors C1, C2, C3.

7. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa et al.

Regarding claim 3, Kanazawa's rectifier circuit 9 can be a single phase rectifier.

The subject matter of claim 8 is same as that of claim 7, no further discussion is needed.

8. Claims 1, 2, 5, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki US Patent No. 5,446,646.

Regarding claim 1, Miyazaki Fig. 2 prior art teaches a motor drive for an air conditioner (see column 1, line 32) comprising: a PWM converter 1 for receiving ac power (Fig. 1 shows an ac power source 3); a three phase inverter (the load 5 may include an inverter and a motor, see column 1, lines 29-31); and a control means (the PWM control circuit 11).

Regarding claim 2, the PWM converter 1 is a three phase converter.

Regarding claims 5 and 6, Miyazaki Fig. 1 shows the PWM converter having same switching devices and diodes and same connection as claimed.

9. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa et al (5,654,882) as applied to claims 1 and 4 above, and further in view of Miyazaki (5,446,646), or vice versa.

Kanazawa et al teach a power converter using a rectifier circuit 9 and a chopper circuit 10. Regarding claims 9 and 10, kanazawa does not teach the same arrangement of switching devices and diodes as a power converter. However, using same arrangement of switching devices and diodes as a power converter is taught by Miyazaki. In view of Miyazaki teaching, it would have been obvious to a skilled person in the art to use Miyazaki's PWM converter (Fig. 1) in the Kanazawa et al Fig. 3 circuit to achieve the same subject matter as claimed.

Then why???

Miyazaki's Fig. 1 converter 1 has a power regeneration capability, which is superior to the Kanazawa's circuit. Further, the transistors and diodes used in the converter of Miyazaki are a more common circuit than a rectifier circuit 9 plus a chopper circuit 10 of Kanazawa et al.

**Alternatively:**

Regarding claims 9 and 10, Miyasaki teaches reactors 2 connected in front of the converter 1, see Miyasaki Fig. 1. Regarding claims 9 and 10, Miyasaki does not teach

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capacitors connected in parallel to the converter circuit. However, capacitors connected in parallel to the converter is taught by Kanazawa.

In view of Kanazawa's teaching, it would have been obvious to a skilled person in the art to add capacitors to the Miyazaki's circuit to achieve the same subject matter as claimed.

Then why???

Adding capacitors further reduce the harmonics or spikes of the ac source. It is noted that the harmonics and spike are all noise. Adding capacitors further filters out these un-desired noise and makes the power source more clean and more pure in a sinusoidal type of waveform.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 571 272-2072.

3/15/2006

  
Bentsu Ro  
Senior Examiner  
Art Unit 2837